

than in men, but corresponding differences were not found in the case of COC/TOC. The adjusted relative risk of fracture was elevated in association with low (≤ -1 SD from the mean) COC; hazard ratio (HR, 95% CI) 2.00 (1.20-3.36) and low COC/TOC; HR 5.32 (3.26-8.68), the relative risk being highest in the population older than 80 yr; and HR 7.02 (2.42-20.39). The predictive value of low COC/TOC lasted 3 yr. The multivariable-adjusted relative risk of hip fracture ($n = 26$) in regard to low COC/TOC ratio was 3.49 (1.12-10.86), as compared with the persons who did not suffer hip fractures. These results suggest that serum COC concns. and, more strongly, COC/TOC, predict the occurrence of fractures in older community-dwelling adults. The risk of fracture associated with low COC/TOC equals the hip fracture risk previously verified for concomitant high serum undercarboxylated OC concns. and low bone mineral d.

=> pettersson k/au

L52	52	FILE	CAPLUS
L53	87	FILE	BIOTECHNO
L54	25	FILE	COMPENDEX
L55	36	FILE	ANABSTR
L56	0	FILE	CERAB
L57	12	FILE	METADEX
L58	0	FILE	USPATFULL

TOTAL FOR ALL FILES

L59	212	PETTERSSON K/AU
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=> l59 and bone

L60	1	FILE	CAPLUS
L61	8	FILE	BIOTECHNO
L62	0	FILE	COMPENDEX
L63	1	FILE	ANABSTR
L64	0	FILE	CERAB
L65	0	FILE	METADEX
L66	0	FILE	USPATFULL

TOTAL FOR ALL FILES

L67	10	L59 AND BONE
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=> l67 and (Gla-OC or COC or gamma-carboxylated osteocalcin)

L68	1	FILE	CAPLUS
L69	0	FILE	BIOTECHNO
L70	0	FILE	COMPENDEX
L71	0	FILE	ANABSTR
L72	0	FILE	CERAB
L73	0	FILE	METADEX
L74	0	FILE	USPATFULL

TOTAL FOR ALL FILES

L75	1	L67 AND (GLA-OC OR COC OR GAMMA-CARBOXYLATED OSTEOCALCIN)
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=> d l75 abs

L75 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN

AB The authors examined serum total osteocalcin (TOC), carboxylated osteocalcin (COC), and their ratio (COC/TOC) by one-step two-site immunofluorescent assays in 87% ($n = 792$) of all home-dwelling persons of 70 yr or older living in a defined area in northern Finland. Other baseline subject-related risk factors of fractures were assessed by postal questionnaires, interviews, clin. exams., and tests. During a 5-yr follow-up period, all falls and fractures ($n = 106$) were recorded by regular phone calls and by examining all the medical records yearly. Serum TOC and COC concns. increased with advancing age and were higher in women than in men, but corresponding differences were not found in the

case of **COC/TOC**. The adjusted relative risk of fracture was elevated in association with low (≤ -1 SD from the mean) **COC**; hazard ratio (HR, 95% CI) 2.00 (1.20-3.36) and low **COC/TOC**; HR 5.32 (3.26-8.68), the relative risk being highest in the population older than 80 yr; and HR 7.02 (2.42-20.39). The predictive value of low **COC/TOC** lasted 3 yr. The multivariable-adjusted relative risk of hip fracture (n = 26) in regard to low **COC/TOC** ratio was 3.49 (1.12-10.86), as compared with the persons who did not suffer hip fractures. These results suggest that serum **COC** concns. and, more strongly, **COC/TOC**, predict the occurrence of fractures in older community-dwelling adults. The risk of fracture associated with low **COC/TOC** equals the hip fracture risk previously verified for concomitant high serum undercarboxylated OC concns. and low **bone mineral d.**

=> l35 and (Gla-OC or COC or gamma-carboxylated osteocalcin)

L76	0 FILE CAPLUS
L77	0 FILE BIOTECHNO
L78	0 FILE COMPENDEX
L79	0 FILE ANABSTR
L80	0 FILE CERAB
L81	0 FILE METADEX
L82	0 FILE USPATFULL

TOTAL FOR ALL FILES

L83	0 L35 AND (GLA-OC OR COC OR GAMMA-CARBOXYLATED OSTEOCALCIN)
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=> l35 and osteoporosis

L84	0 FILE CAPLUS
L85	0 FILE BIOTECHNO
L86	0 FILE COMPENDEX
L87	0 FILE ANABSTR
L88	0 FILE CERAB
L89	0 FILE METADEX
L90	0 FILE USPATFULL

TOTAL FOR ALL FILES

L91	0 L35 AND OSTEOPOROSIS
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that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.

ENTER A FILE NAME OR (IGNORE):ignore

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SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FULL ESTIMATED COST

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FILE 'BIOTECHNO' ENTERED AT 14:43:57 ON 02 AUG 2004

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=> (COC or gamma-carboxylated osteocalcin) and (bone or osteoporosis or fracture)

L1	2 FILE AGRICOLA
L2	4 FILE BIOTECHNO
L3	0 FILE CONFSCI
L4	0 FILE HEALSAFE
L5	0 FILE IMSDRUGCONF
L6	6 FILE LIFESCI
L7	0 FILE MEDICONF
L8	12 FILE PASCAL

TOTAL FOR ALL FILES

L9 24 (COC OR GAMMA-CARBOXYLATED OSTEOCALCIN) AND (BONE OR OSTEOPOROSIS OR FRACTURE)

=> dup rem

ENTER L# LIST OR (END):19

DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF, MEDICONF'.

ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE

PROCESSING COMPLETED FOR L9

L10 17 DUP REM L9 (7 DUPLICATES REMOVED)

=> d l10 ibib abs total

L10 ANSWER 1 OF 17 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED.
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ACCESSION NUMBER: 2003-0190529 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRGT. 2003 INIST-CNRS. All rights reserved.

TITLE (IN ENGLISH): Clinicopathologic spectrum of the So-called calcifying odontogenic cysts: A study of 21 intraosseous cases with reconsideration of the terminology and classification
AUTHOR: LI Tie-Jun; YU Shi-Feng
CORPORATE SOURCE: Department of Oral Pathology, School of Stomatology, Peking University, Beijing, China
SOURCE: The American journal of surgical pathology, (2003), 27(3), 372-384, 45 refs.
ISSN: 0147-5185 CODEN: AJSPDX
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-18344, 354000103958960110

AN 2003-0190529 PASCAL

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AB The so-called calcifying odontogenic cyst (COC) represents a heterogeneous group of lesions that exhibit a variety of clinicopathologic and behavioral features. Because of this diversity, there has been confusion and disagreement on the terminology and classification of these lesions. We reviewed the clinicopathologic features of 21 intraosseous cases that were previously diagnosed as COC or under related diagnostic terms. Based on the biologic behavior, the lesions of the present series were divided into three subgroups: cyst, benign tumor, and malignant tumor. Sixteen cases (nine men and seven women) proved to be unicystic lesions with (five cases) or without associated odontoma. The lining epithelium of the cystic lesions fulfilled the histologic criteria for COC proposed by the World Health Organization, and their overall clinicopathologic features were consistent with that of developmental odontogenic cysts. The age of patients from the cyst group peaked at the second decade. The maxilla was affected more often (69%) than the mandible, with a predilection for the canine-premolar region (62.5%). Thirteen patients with follow-up information revealed no recurrence following enucleation. The four cases in the benign tumor group had variable clinicopathologic features. Two cases were solid tumors consisting of ameloblastoma-like sheets of odontogenic epithelium that contained ghost cells/calcification foci and juxtaepithelial dentinoid. Both patients experienced multiple recurrences following conservative surgeries. The other two lesions contained typical areas of COC and other types of odontogenic tumors (one ameloblastoma and one odontogenic myxofibroma). All four lesions occurred in the mandible and were relatively large. In the present series one case identified as malignant tumor arose from a previously benign COC. The tumor shared some features of COC (ghost cell foci and dystrophic calcification) but also had prominent mitotic activity, nuclear and cytoplasmic pleomorphism, areas of tumor necrosis, and infiltrative/destructive growth. Recognizing the extreme diversity in clinicopathologic features and biologic behavior among the so-called COCs, we suggest that the term COC should be used to specifically designate the unicystic lesions with or without an associated odontoma, i.e., lesions of the cyst group, and other related lesions identified as benign tumor and malignant tumor should be termed and classified separately. A tentative scheme with respect to the terminology and classification for this group of disparately behaving lesions was herein proposed to reflect the likely difference of their nature.

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ACCESSION NUMBER: 2003-0387050 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRGT. 2003 INIST-CNRS. All rights reserved.

TITLE (IN ENGLISH): Effects of a low-dose and ultra-low-dose combined oral

contraceptive use on **bone** turnover and
bone mineral density in young fertile women: a
prospective controlled randomized study
AUTHOR: NAPPI C.; DI SPIEZIO SARDO A.; ACUNZO G.; BIFULCO G.;
TOMMASELLI G. A.; GUIDA M.; DI CARLO C.
CORPORATE SOURCE: Department of Gynecology and Obstetrics, and
Pathophysiology of Human Reproduction, University of
Naples "Federico II", Via Pansini 5, 80100 Naples,
Italy
SOURCE: Contraception : (Stoneham), (2003), 67(5), 355-359, 28
refs.
ISSN: 0010-7824 CODEN: CCPTAY
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-15369, 354000118331350030
AN 2003-0387050 PASCAL
CP Copyright .COPYRG. 2003 INIST-CNRS. All rights reserved.
AB In this prospective, controlled, randomized study, we compared the effect
of a low-dose 21-day combined oral contraceptive (COC)
containing 20 µg ethinyl estradiol (EE) and 75 µg gestodene (GTD)
(Group A; n = 19) with an ultra-low-dose 24-day COC containing
15 µg EE and 60 µg GTD (Group B; n = 18) on **bone** turnover
and **bone** mineral density (BMD) in young, fertile women.
Nineteen healthy fertile women were used as untreated controls (Group C).
At 3, 6, 9 and 12 months of the study serum osteocalcin (BGP), urinary
pyridinoline (PYD) and deoxypyridinoline (D-PYD) were measured in all
subjects. At baseline and after 12 months BMD was determined at lumbar
spine by dual-energy X-ray absorptiometry in all patients. In both Groups
A and B, urinary levels of PYD and D-PYD at 6, 9 and 12 months, were
significantly reduced in comparison with basal values and with control
subjects (p < 0.05). No significant differences in urinary PYD and D-PYD
levels were observed between Groups A and B during the entire period of
treatment. At 12 months, no statistically significant difference in
spinal BMD values was detected between the three groups and in comparison
with basal values. The present study suggests that the two **COCs**
could exert a similar positive effect on **bone** turnover in young
postadolescent women, without any significant and appreciable
modification of BMD.

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ACCESSION NUMBER: 2003-0053828 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRG. 2003 INIST-CNRS. All rights
reserved.
TITLE (IN ENGLISH): A recurrent case of odontogenic ghost cell tumour of
the mandible
AUTHOR: KASAHARA K.; IIZUKA T.; KOBAYASHI I.; TOTSUKA Y.;
KOHGO T.
CORPORATE SOURCE: Oral and Maxillofacial Surgery, Graduate School of
Dental Medicine, Hokkaido University, Japan; Oral
Pathology, Graduate School of Dental Medicine,
Hokkaido University, Japan
SOURCE: International journal of oral and maxillofacial
surgery, (2002), 31(6), 684-687, 8 refs.
ISSN: 0901-5027 CODEN: IJOSE9
DOCUMENT TYPE: Journal; (case report, clinical case)
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Denmark
LANGUAGE: English
AVAILABILITY: INIST-16201, 354000106974730210
AN 2003-0053828 PASCAL
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AB Odontogenic ghost cell tumour (OGCT), also referred to as dentinogenic ghost cell tumour, is an extremely rare tumour classified as a neoplastic variant of calcifying odontogenic cyst (COC). To date, only 13 cases of OGCT arising in the maxilla or mandible have been reported. We describe an OGCT that recurred after segmental resection of the mandible in a 59-year-old man. Histopathological examination revealed tumour invasion of the surrounding cortical **bone**, areas containing numerous calcifying flaky cell nests, and dentinoid matrix near epithelial cell nests. No atypical mitosis was found. There has been no evidence of recurrence or metastasis in the 4 years after operation.

L10 ANSWER 4 OF 17 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
DUPLICATE

ACCESSION NUMBER: 2002:35286032 BIOTECHNO
TITLE: Shift of serum osteocalcin components between cord blood and blood at day 5 of life
AUTHOR: Shimizu N.; Shima M.; Hirai H.; Nakajima S.; Nishimura K.; Yamaoka K.; Okada S.
CORPORATE SOURCE: Dr. M. Shima, Dept. of Devmtl. Med. (Pediatrics), Osaka Univ. Grad. School of Medicine, Osaka 565-0871, Japan.
E-mail: masa@ped.med.osaka-u.ac.jp
SOURCE: Pediatric Research, (01 NOV 2002), 52/5 (656-659), 20 reference(s)
CODEN: PEREBL ISSN: 0031-3998
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English

AN 2002:35286032 BIOTECHNO

AB Vitamin K deficiency is a relatively common condition in neonates. However, the role of vitamin K in neonatal **bone** metabolism remains to be determined. Osteocalcin (OC) is the most abundant noncollagenous protein in **bone**, and is regulated to be γ -carboxylated by vitamin K. In this study, we measured **gamma**-carboxylated osteocalcin (Gla-OC) and non- or undercarboxylated osteocalcin (Glu-OC) separately, and examined the effects of vitamin K on osteocalcin metabolism. Eighteen full-term healthy neonates were enrolled in this study. In the cord and d-5 blood samples, the OC levels were determined by three different methods to examine the intact OC by immunoradiometric assay (IRMA), Gla-OC, and Glu-OC. Serum vitamin K fractions, hepaplastin test, and type 1 procollagen carboxyl extension peptide were also determined. Urine samples were also collected from the first voiding and on d 5 to determine urinary pyridinoline, deoxypyridinoline, and γ -carboxylated glutamic acid. Serum levels of phylloquinone (PK) and menaquinone (MK)-4 increased on d 5 following vitamin K administration and increased intake in breast milk and/or formula. The OC levels determined by IRMA did not change between cord and d-5 blood samples, but the Gla-OC level increased remarkably and Glu-OC reduced to a negligible level. OC in cord blood is mainly Glu-OC, and Glu-OC is replaced with Gla-OC within 5 d of life after vitamin K supplement. The IRMA assay fails to distinguish Gla-OC from Glu-OC and caution is needed to estimate **bone** turnover with this method in the perinatal period.

L10 ANSWER 5 OF 17 LIFESCI COPYRIGHT 2004 CSA on STN

ACCESSION NUMBER: 2002:50776 LIFESCI
TITLE: Prolonged Intake of Isoflavone- and Saponin-Containing Soybean Extract (Nijiru) Supplement Enhances Circulating **gamma**-Carboxylated Osteocalcin Concentrations in Healthy Individuals
AUTHOR: Yamaguchi, M.; Ono, R.; Ma, Z.J.
CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism,

Graduate School of Nutritional Sciences, University of
Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan; E-mail:
yamaguch@u-shizuoka-ken.ac.jp
Alternatives, (20010000) vol. 27, no. 1, pp. 579-582.
ISSN: 1205-7398.

SOURCE:

DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The effect of nijiru, which is a by-product of the processing of soybeans to make the fermented soybeans called natto, on circulating blood chemistry levels related to calcium and **bone** metabolism in healthy individuals was investigated. Twelve volunteers (six men and six women) were received nijiru twice a day for 60 days at a dose of 1500 mg (6 tablets) per day. The serum **gamma -carboxylated osteocalcin** concentration was significantly increased by the intake of nijiru in both men and women to about 2-fold that in the control group. The serum calcium concentration was significantly decreased by nijiru supplementation in women, and the serum inorganic phosphorus concentration was significantly reduced in both men and women. However, the intake of nijiru did not have a significant effect on serum glucose, nitrogen urea, albumin, free cholesterol, triglyceride, high-density lipoprotein cholesterol, and gamma -glutamyltranspeptidase concentrations in men or women, indicating that liver and renal function is not affected by nijiru supplementation. The results of the present study suggest that the intake of isoflavone- and saponin-containing nijiru can stimulate the gamma -carboxylation of osteocalcin, which plays an important role in **bone** formation and mineralization, in healthy individuals.

L10 ANSWER 6 OF 17 LIFESCI COPYRIGHT 2004 CSA on STN DUPLICATE 2

ACCESSION NUMBER: 2001:41145 LIFESCI

TITLE: Strong Prediction of Fractures Among Older Adults
by the Ratio of Carboxylated to Total Serum Osteocalcin

AUTHOR: Luukinen, H.; Kaekonen, S.-M.; Pettersson, K.; Koski, K.;
Laippala, P.; Levgren, T.; Kivelae, S.-L.; Vaeaenaenen,
H.K.

CORPORATE SOURCE: Department of Public Health Science and General Practice,
University of Oulu, Oulu University Hospital, Oulu, Finland

SOURCE: Journal of Bone and Mineral Research [J. Bone Miner. Res.],
(20001200) vol. 15, no. 12, pp. 2473-2478.
ISSN: 0884-0431.

DOCUMENT TYPE: Journal
FILE SEGMENT: T
LANGUAGE: English
SUMMARY LANGUAGE: English

AB We examined serum total osteocalcin (TOC), carboxylated osteocalcin (COC), and their ratio (COC/TOC) by one-step two-site immunofluorescent assays in 87% (n = 792) of all home-dwelling persons of 70 years or older living in a defined area in northern Finland. Other baseline subject-related risk factors of **fractures** were assessed by postal questionnaires, interviews, clinical examinations, and tests. During a 5-year follow-up period, all falls and **fractures** (n = 106) were recorded by regular phone calls and by examining all the medical records yearly. Serum TOC and COC concentrations increased with advancing age and were higher in women than in men, but corresponding differences were not found in the case of COC/TOC. The adjusted relative risk of **fracture** was elevated in association with low (less than or equal to -1 SD from the mean) COC; hazard ratio (HR, 95% CI) 2.00 (1.20-3.36) and low COC/TOC; HR 5.32 (3.26-8.68), the relative risk being highest in the population older than 80 years; and HR 7.02 (2.42-20.39). The predictive value of low COC/TOC lasted 3 years. The multivariable-adjusted relative risk of hip **fracture** (n = 26) in regard to low COC/TOC ratio was 3.49 (1.12-10.86), as compared with the persons who did not

suffer hip **fractures**. Our results suggest that serum **COC** concentrations and, more strongly, **COC/TOC**, predict the occurrence of **fractures** in older community-dwelling adults. The risk of **fracture** associated with low **COC/TOC** equals the hip **fracture** risk previously verified for concomitant high serum undercarboxylated OC concentrations and low **bone** mineral density.

L10 ANSWER 7 OF 17 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 3

ACCESSION NUMBER: 2001:57413 AGRICOLA
DOCUMENT NUMBER: IND23216191
TITLE: Vitamin K supplementation reduces serum concentrations of under-**gamma-carboxylated osteocalcin** in healthy young and elderly adults.
AUTHOR(S): Binkley, N.C.; Krueger, D.C.; Engelke, J.A.; Foley, A.L.; Suttie, J.W.
AVAILABILITY: DNAL (389.8 J824)
SOURCE: The American journal of clinical nutrition, Dec 2000. Vol. 72, No. 6. p. 1523-1528
Publisher: Bethesda, Md. : American Society for Clinical Nutrition.
CODEN: AJCNAC; ISSN: 0002-9165
NOTE: Includes references
PUB. COUNTRY: Maryland; United States
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB Background: Subclinical vitamin K insufficiency, manifested by under-**gamma-carboxylation** of the **bone** matrix protein osteocalcin, may be common. Objective: Our objective was to delineate the prevalence of sub-maximal **gamma-carboxylation** as assessed by response to phylloquinone supplementation and to evaluate the effect of this intervention on skeletal turnover in healthy North American adults. Design: Healthy subjects (n = 219), approximately equally distributed by sex and age (18-30 y and greater than or equal to 65 y), received daily phylloquinone (1000 microgram) or placebo for 2 wk. Serum undercarboxylated osteocalcin (ucOC) and total osteocalcin, N-telopeptides of type I collagen (NTx), **bone-specific alkaline phosphatase** (BSAP), and phylloquinone concentrations were measured at baseline and after weeks 1 and 2. Results: At baseline, the mean serum phylloquinone concentration was lower in the young than in the old group; there was no effect of sex. Concomitantly, baseline %ucOC was highest in the young and lowest in the old men (P < 0.0001) but did not differ significantly by age in women. After supplementation, serum phylloquinone concentration increased approximately equal to 10-fold (P < 0.0001) at week 1 (from 0.93 +/- 0.08 to 8.86 +/- 0.70 nmol/L, average +/- SEM); this was sustained through week 2. Among all supplemented groups, mean %ucOC decreased from 7.6% to 3.4% without significant differences by age or sex; 102 of 112 subjects had a > 1% decrease. Phylloquinone supplementation reduced serum osteocalcin but did not alter NTx or BSAP concentration. Conclusions: Usual dietary practices in this population did not provide adequate vitamin K for maximal osteocalcin carboxylation. Phylloquinone supplementation reduced serum osteocalcin concentration but did not alter other markers of serum **bone** turnover.

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ACCESSION NUMBER: 2001-0108818 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRG. 2001 INIST-CNRS. All rights reserved.

TITLE (IN ENGLISH): Effects of **bone** morphogenetic protein-2 on human tumor cell growth and differentiation : a preliminary report

AUTHOR: ORUI Hiroshi; IMAIZUMI Satoshi; OGINO Toshihiko; MOTOYAMA Teiichi

CORPORATE SOURCE: Department of Orthopaedic Surgery, Yamagata University School of Medicine, Yamagata 990-9585, Japan; Second Department of Pathology, Yamagata University School of Medicine, Yamagata, Japan; Department of Orthopaedic Surgery, Niigata University School of Medicine, Niigata, Japan

SOURCE: Journal of orthopaedic science, (2000), 5(6), 600-604, 29 refs.
ISSN: 0949-2658

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Japan

LANGUAGE: English

AVAILABILITY: INIST-26359, 354000094002690120

AN 2001-0108818 PASCAL

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AB The effects of recombinant human **bone** morphogenetic protein-2 (rhBMP-2) on cell growth were studied in three human osteosarcoma cell lines, NOS-1, HuO9, and HuO-3N1; one human prostate cancer cell line, PC-3; and one human breast cancer cell line, OCUB-1M. The growth of these cell lines was not promoted by rhBMP-2 at concentrations of 50, 100, 250, and 500 ng/ml, as evaluated by colorimetric 3 (4,5-dimethyl-thiazol-2-yl)-2,5 diphenyl tetrazolium bromide (MTT) assay. Furthermore, the protein induced osteogenic differentiation, characterized by increased alkaline phosphatase activity, and increased production of type 1 collagen and **gamma.-carboxylated osteocalcin** in NOS-1 cells. The results of this study may suggest the feasibility of using rhBMP-2 for the reconstruction of **bone** defects caused by malignant tumors, although the data are still preliminary and require further investigation.

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ACCESSION NUMBER: 2001-0007596 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRG. 2001 INIST-CNRS. All rights reserved.

TITLE (IN ENGLISH): The effect of combined oral contraception with or without spironolactone on **bone** mineral density of hyperandrogenic women

AUTHOR: GREGORIOU O.; BAKAS P.; KONIDARIS S.; PAPADIAS K.; MATHIOPOULOS D.; CREATSAS G.

CORPORATE SOURCE: Second Department of Obstetrics and Gynecology, Aretaieion Hospital, University of Athens, Athens, Greece

SOURCE: Gynecological endocrinology, (2000), 14(5), 369-373, 16 refs.
ISSN: 0951-3590

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United Kingdom

LANGUAGE: English

AVAILABILITY: INIST-26975, 354000091564160090

AN 2001-0007596 PASCAL

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AB We studied the effect of treatment with combined oral contraception (COC) with or without spironolactone on the **bone** mineral density (BMD) of hyperandrogenic women. A group of 22 women (group 1) was treated with ethinylestradiol plus desogestrel for 21 days each month for 12 months, while another group of 21 patients (group 2) was treated with

ethinylestradiol and desogestrel for 21 days each month plus spironolactone daily for 12 months. There was no statistically significant difference with respect to mean age, body mass index (BMI) and BMD between the two groups of patients before the treatment. Serum levels of follicle stimulating hormone (FSH), luteinizing hormone (LH), androstenedione, total testosterone, dehydroepiandrosterone sulfate (DHEAS), sex hormone binding globulin (SHBG), prolactin and estradiol were assessed in both groups and no statistically significant difference was found before treatment. Nor was there any statistically significant difference in **bone** turnover between the two groups. Statistical analysis was performed using the Student's t test for unpaired data to compare age, BMD and biochemical data, and statistical significance was defined as $p < 0.05$. The BMD before and after 12 months of treatment showed no statistically significant difference between the patients of group 1 and those of group 2, suggesting that both ethinylestradiol plus desogestrel, and ethinylestradiol and desogestrel plus spironolactone daily for 12 months at the given doses do not affect the BMD of the treated women, while the addition of spironolactone improves the efficacy of hirsutism treatment.

L10 ANSWER 10 OF 17 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
 DUPLICATE
 ACCESSION NUMBER: 2000:30671086 BIOTECHNO
 TITLE: Prolonged intake of dietary fermented soybeans (natto) with the reinforced vitamin K.sub.2 (menaquinone-7) enhances circulating **.gamma.-carboxylated osteocalcin** concentration in normal individuals
 AUTHOR: Tsukamoto Y.; Ichise H.; Yamaguchi M.
 CORPORATE SOURCE: M. Yamaguchi, Lab. of Endocrinol./Molec. Metabol., Graduate Sch. of Nutritional Sci., University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan. E-mail: yamaguch@fns1.u-shizuoka-ken.ac.jp
 SOURCE: Journal of Health Science, (2000), 46/4 (317-321), 16 reference(s)
 CODEN: JHSCFD ISSN: 1344-9702
 DOCUMENT TYPE: Journal; Article
 COUNTRY: Japan
 LANGUAGE: English
 SUMMARY LANGUAGE: English
 AN 2000:30671086 BIOTECHNO
 AB The change in circulating vitamin K.sub.2 (menaquinone-7; MK-7) and **.gamma.-carboxylated osteocalcin** (Gla osteocalcin) concentrations in normal individuals with the intake of fermented soybean (natto) was investigated. Forty eight volunteers (forty five males and three females) were divided into three groups of sixteen volunteers each (fifteen males and one female), and each group was given sequentially the fermented soybean (natto; 50 g) containing three different contents of MK-7 once a day for 14 d as follows: Either regular natto with 865 µg MK-7/100 g of natto, reinforced natto containing 1295 µg MK-7/100 g, or 1730 µg MK-7/100 g. Serum MK-7 was not found in normal individuals who had not had natto intake. Serum MK-7 and **.gamma.-carboxylated osteocalcin** concentrations were significantly raised 7, 10, and 14 d after the start of the intake of reinforced natto containing 1295 or 1730 µg MK-7/100 g. However, serum µ-carboxylated osteocalcin levels were not significantly elevated by the intake of regular natto, although serum-MK-7 levels were significantly raised. Moreover, serum **.gamma.-carboxylated osteocalcin** concentration was significantly elevated 14 d after the intake of natto containing either 1295 or 1730 µg MK-7/100 g, as compared with that of regular natto intake. The present study suggests that the intake of dietary MK-7 in the reinforced natto can stimulate γ-carboxylation of osteocalcin, which plays an important role in **bone** formation in

normal individuals.

L10 ANSWER 11 OF 17 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED.
on STN

ACCESSION NUMBER: 2000-0312730 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Intake of fermented soybean (natto) increases circulating vitamin K.sub.2 (menaquinone-7) and .
gamma.-carboxylated osteocalcin concentration in normal individuals
AUTHOR: TSUKAMOTO Y.; ICHISE H.; KAKUDA H.; YAMAGUCHI M.
CORPORATE SOURCE: Central Research Institute, Mitsukan Group Co., Ltd., Aichi, Japan; Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan
SOURCE: Journal of bone and mineral metabolism : (English ed.), (2000), 18(4), 216-222, 16 refs.
ISSN: 0914-8779
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Japan
LANGUAGE: English
AVAILABILITY: INIST-26322, 354000082424230060

AN 2000-0312730 PASCAL

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AB Changes in circulating vitamin K.sub.2 (menaquinone-7, MK-7) and .
gamma.-carboxylated osteocalcin concentrations in normal individuals with the intake of fermented soybeans (natto) were investigated. Eight male volunteers were given sequentially fermented soybeans (natto) containing three different contents of MK-7 at an interval of 7 days as follows: regular natto including 775µg/100g (MK-7 x 1) or reinforced natto containing 1298µg/100g (MK-7 x 1.5) or 1765µg/100g (MK-7 x 2). Subsequently, it was found that serum MK-7 and .**gamma.-carboxylated osteocalcin** concentrations were significantly elevated following the start of dietary intake of MK-7 (1298 or 1765µg/100g). Serum undercarboxylated osteocalcin concentrations were significantly decreased by dietary MK-7 (1765µg/100g) supplementation. Moreover, the changes in serum MK-7 level with the frequency of dietary natto intake were examined in 134 healthy adults (85 men and 39 women) without and with occasional (a few times per month), and frequent (a few times per week) dietary intake of regular natto including MK-7 (775µg/100g). Serum MK-7 and .**gamma.-carboxylated osteocalcin** concentrations in men with the occasional or frequent dietary intake of natto were significantly higher than those without any intake. The present study suggests that intake of fermented soybean (natto) increases serum levels of MK-7 and .**gamma.-carboxylated osteocalcin** in normal individuals.

L10 ANSWER 12 OF 17 LIFESCI COPYRIGHT 2004 CSA on STN

ACCESSION NUMBER: 2001:58087 LIFESCI

TITLE: Prolonged intake of fermented soybean (natto) diets containing vitamin K2 (menaquinone-7) prevents **bone** loss in ovariectomized rats

AUTHOR: Yamaguchi, M.; Kakuda, H.; Gao, Y.H.; Tsukamoto, Y.

CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan

SOURCE: Journal of Bone and Mineral Metabolism [J. Bone Miner. Metab.], (20000210) vol. 18, no. 2, pp. 71-76.
ISSN: 0914-8779.

DOCUMENT TYPE: Journal
FILE SEGMENT: T
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The effect of the prolonged intake of dietary vitamin K2 (menaquinone-7, MK-7) on **bone** loss in ovariectomized (OVX) rats was investigated. OVX rats were freely given experimental diets containing the fermented soybean (natto; including 9.4 μ g MK-7 /100 g diet) without or with supplemental MK-7 (containing 14.1 or 18.8 μ g of MK-7 as total per 100 g diet) for 150 days. Feeding produced a significant elevation of MK-7 concentration in the serum of OVX rats. In this case, the femoral MK-4 content was significantly increased, but MK-7 was not detected in the femoral tissues, indicating degradation of MK-7. Serum **gamma** - **carboxylated osteocalcin** concentration was significantly decreased by OVX. This decrease was significantly prevented by the feeding of the natto diets with supplemental MK-7 (18.8 μ g/100 g diets). OVX caused a significant decrease in femoral dry weight, femoral calcium content, and mineral density. These decreases were significantly prevented by feeding with diets containing natto with MK-7 (total, 18.8 μ g/100 g diets). This study demonstrates that the prolonged intake of natto dietary including MK-7 has a preventive effect on **bone** loss induced by OVX. Dietary MK-7 may be useful in the prevention of **osteoporosis**.

L10 ANSWER 13 OF 17 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
DUPLICATE

ACCESSION NUMBER: 1999:29541006 BIOTECHNO
TITLE: Chemistry and structure activity relationships of bafilomycin A.sub.1, a potent and selective inhibitor of the vacuolar H.sup.+ -ATPase
AUTHOR: Gagliardi S.; Rees M.; Farina C.
CORPORATE SOURCE: S. Gagliardi, SmithKline Beecham SpA, Via Zambelletti, 20021 Baranzate di Bollate, Milano, Italy.
SOURCE: Current Medicinal Chemistry, (1999), 6/12 (1197-1212), 75 reference(s)
CODEN: CMCHE7 ISSN: 0929-8673
DOCUMENT TYPE: Journal; Article
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English

AN 1999:29541006 BIOTECHNO

AB Bafilomycin A.sub.1, a macrolide antibiotic isolated from the fermentation of Streptomyces spp., is a potent and selective inhibitor of vacuolar-type proton translocating ATP-ases (V-ATPases) and was used to study the physiological role of this class of enzymes. An extensive chemical effort on the unusual structure of this macrolide led to the synthesis of significantly different bafilomycin derivatives. None of the new analogues was more potent than the parent compound but provided a significant amount of information about the structural requirements for the inhibitory activity of bafilomycin A.sub.1 in particular on chicken osteoclast (**cOc**) ATPase. The vinylic methoxy group adjacent to a carbonyl function, the dienic system and the hydroxy group at position 7 were recognized to be essential features for bafilomycin V-ATPase-inhibitory activity. This information was utilized to design simplified novel derivatives as inhibitors of **bone** resorption.

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ACCESSION NUMBER: 1998-0301462 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1998 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Synthesis and structure-activity relationships of bafilomycin A.sub.1 derivatives as inhibitors of vacuolar H.sup.+ -ATPase

AUTHOR: GAGLIARDI S.; GATTI P. A.; BELFIORE P.; ZOCCHETTI A.;
CLARKE G. D.; FARINA C.
CORPORATE SOURCE: SmithKline Beecham SpA, Via Zambelletti, 20021
Baranzate, Milano, Italy
SOURCE: Journal of medicinal chemistry, (1998), 41(11),
1883-1893, 33 refs.
ISSN: 0022-2623 CODEN: JMCMAR
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-9165, 354000076503600150

AN 1998-0301462 PASCAL

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AB The macrolide antibiotic bafilomycin A.sub.1 is a highly potent and selective inhibitor of all the vacuolar ATPases (V-ATPases). With the aim of obtaining novel analogues specific for the osteoclast subclass of vacuolar ATPase, 31 derivatives of bafilomycin A.sub.1 were synthesized and tested for their ability to inhibit differentially the V-ATPase-driven proton transport in membrane vesicles derived from chicken osteoclasts (cOc) and bovine chromaffin granules (bCG). Although none of the new analogues were more potent than the parent compound, the obtained data provided a significant amount of information about the structural requirements for the inhibitory activity of bafilomycin A.sub.1. The different effects of a few analogues on the two enzymes could also suggest the possibility of a selective modulation of the V-ATPases in different tissues.

L10 ANSWER 15 OF 17 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
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ACCESSION NUMBER: 96:40327 AGRICOLA

DOCUMENT NUMBER: IND20520311

TITLE: The efficacy of an enzymic cocktail and a fungal mycelium in dephosphorylating corn-soybean meal-based feeds fed to growing turkeys.

AUTHOR(S): Zyla, K.; Ledoux, D.R.; Kujawski, M.; Veum, T.L.

CORPORATE SOURCE: University of Agriculture, Krakow, Poland.

AVAILABILITY: DNAL (47.8 Am33P)

SOURCE: Poultry science, Mar 1996. Vol. 75, No. 3. p. 381-387
Publisher: Savoy, IL : Poultry Science Association, Inc.

CODEN: POSCAL; ISSN: 0032-5791

NOTE: Includes references

PUB. COUNTRY: Illinois; United States

DOCUMENT TYPE: Article

FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension

LANGUAGE: English

AB A study was conducted to determine the efficacy of phytase, an enzymic cocktail, and a waste *Aspergillus niger* mycelium to hydrolyze phytate present in corn-soybean meal diets. One hundred turkey poults were assigned to dietary treatments for 2 wk (Days 7 to 21). Dietary treatments included: 1) NRC (1994) diet (NRC), with recommended concentration of 0.6% available P (aP) and 1.2% Ca; 2) Phytase diet (PHYT), 1,000 units phytase/kg diet, 0.16% aP, and 0.84% Ca; 3) cocktail diet (COC), 1,000 units of phytase/kg diet plus acid phosphatase (100 units/g of diet), acid protease (42 units/g of diet), pectinase (2.94%), 0.16% aP, and 0.84% Ca; 4) Fungal mycelium diet (MYC), 5% mycelium, 0.16% aP, and 0.84% Ca; and 5) a positive control diet (CTRL+), 0.42% aP, and 0.84% Ca. Turkeys fed the PHYT diet consumed less feed and gained less weight but retained more P than poults fed the CTRL+ or NRC diets. Poults fed the COC diet performed as well as poults fed CTRL+ or NRC diets but retained more P (77%) and Ca (68%). Poults fed the MYC diet retained 79%

P, gained the most weight, and were more efficient than poult fed any other dietary treatment. In vitro P release from experimental diets correlated well ($R = 0.906$) with P retention as observed in the feeding trial. Compared with the diet containing phytase as the sole supplemental enzyme, both the enzymic cocktail and fungal mycelium enhanced performance, **bone** mineralization, and retention of P and Ca in growing turkeys.

L10 ANSWER 16 OF 17 LIFESCI COPYRIGHT 2004 CSA on STN

ACCESSION NUMBER: 96:34767 LIFESCI

TITLE: Odontogenic ghost cell carcinoma: Report of a case and review of the literature

AUTHOR: Alcalde, R.E.; Sasaki, A.*; Misaki, M.; Matsumura, T.

CORPORATE SOURCE: Dep. Oral and Maxillofacial Surg. II, Okayama Univ. Dental Sch., Shikata-cho 2-5-1, Okayama-shi 700, Japan

SOURCE: J. ORAL MAXILLOFAC. SURG., (1996) vol. 54, no. 1, pp. 108-111.
ISSN: 0278-2391.

DOCUMENT TYPE: Journal

FILE SEGMENT: T

LANGUAGE: English

AB The calcifying odontogenic cyst (COC) was first recognized by Gorlin et al in 1962 and described by the World Health Organization in 1971 as a cystic lesion that shows an epithelial lining with a well-defined basal layer of columnar cells, an overlying layer that may resemble the stellate reticulum, and masses of ghost cells. A carcinoma forming in COC was originally shown in the same publication on odontogenic tumors. The term odontogenic ghost cell carcinoma (OGCC) was used later to defined this rare entity that has features of COC and an infiltrative pattern, epithelial cell atypia, numerous mitoses, and necrotic foci. Only six cases of simultaneous occurrence of COC and its malignant transformation have been reported in the English language literature. The present article describes a case of OGCC of the maxilla in a 72-year-old woman and discusses the treatment and prognosis of the cases previously reported.

L10 ANSWER 17 OF 17 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
DUPLICATE

ACCESSION NUMBER: 1991:21190175 BIOTECHNO

TITLE: A one step sandwich enzyme immunoassay for .
gamma.-carboxylated
osteocalcin using monoclonal antibodies

AUTHOR: Koyama N.; Ohara K.; Yokota H.; Kurome T.; Katayama M.; Hino F.; Kato I.; Akai T.

CORPORATE SOURCE: Biotechnology Research laboratory, Takara Shuzo Co. Ltd., Otsu, Shiga 520-21, Japan.

SOURCE: Journal of Immunological Methods, (1991), 139/1 (17-23)

CODEN: JIMMBG ISSN: 0022-1759

DOCUMENT TYPE: Journal; Article

COUNTRY: Netherlands

LANGUAGE: English

SUMMARY LANGUAGE: English

AN 1991:21190175 BIOTECHNO

AB A highly sensitive, simple and reliable one-step sandwich enzyme immunoassay (EIA) for the γ -carboxylated form of osteocalcin (Gla-OC) has been developed using a monoclonal antibody. The minimum amount of Gla-OC detected by this EIA was approximately 0.2 ng/ml when a 10 μ l aliquot of the sample was used. The serum Gla-OC level in 30 healthy subjects was 3.6 ± 2.19 ng/ml (mean \pm SD). A significant increase was seen in patients with chronic renal failure (20.3 ± 4.60 ng/ml), atherosclerosis (8.3 ± 4.94 ng/ml) and **osteoporosis** (10.1 ± 4.60 ng/ml). The correlation between the values obtained by the sandwich EIA and competitive RIA methods was given by the linear

regression equation, $y = 2.896 + 0.759x$, for which the correlation coefficient (r) was 0.815 ($n = 58$). This newly developed Gla-OC specific EIA may be useful for the diagnosis of metabolic **bone** disease and ectopic calcification.

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=> (COC or gamma-carboxylated osteocalcin or Gla-OC) and (bone or osteoporosis or fracture)

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L12	4	FILE BIOTECHNO
L13	2	FILE COMPENDEX
L14	0	FILE ANABSTR
L15	0	FILE CERAB
L16	0	FILE METADEX
L17	365	FILE USPATFULL

TOTAL FOR ALL FILES

L18	393	(COC OR GAMMA-CARBOXYLATED OSTEOCALCIN OR GLA-OC) AND (BONE OR OSTEOPOROSIS OR FRACTURE)
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=> (gamma-carboxylated osteocalcin or Gla-OC) and (bone or osteoporosis or fracture)

L19	12	FILE CAPLUS
L20	3	FILE BIOTECHNO
L21	0	FILE COMPENDEX
L22	0	FILE ANABSTR
L23	0	FILE CERAB
L24	0	FILE METADEX
L25	0	FILE USPATFULL

TOTAL FOR ALL FILES

L26	15	(GAMMA-CARBOXYLATED OSTEOCALCIN OR GLA-OC) AND (BONE OR OSTEOPOROSIS OR FRACTURE)
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PROCESSING COMPLETED FOR L26
L27 12 DUP REM L26 (3 DUPLICATES REMOVED)

=> d l27 ibib abs total

L27 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:766475 CAPLUS
DOCUMENT NUMBER: 140:198538
TITLE: Relationship between the carboxylation status of serum
osteocalcin and changes in blood and urinary Ca, P and
Mg following glucose loading
AUTHOR(S): Sakamoto, Naomasa
CORPORATE SOURCE: Dep. Hygiene, Hyogo College of Med., 1-1 Mukogawa-Cho
Nishinomiya Hyogo, 663-8501, Japan
SOURCE: Maguneshumu (Kyoto, Japan) (2003), 22(1), 47-52
CODEN: MAGUEO; ISSN: 0913-4867
PUBLISHER: Nippon Maguneshumu Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB The aim of this study was to clarify the relationship between **bone** metabolism and vitamin K on glucose loading. Osteocalcin (OC) is a vitamin K-dependent protein derived from osteoblasts, and the carboxylated (Gla-OC) and undercarboxylated (Glu-OC) forms are known. We investigated the relationship between the serum Glu/Gla-OC ratio and the serum and urinary **bone** minerals (Ca, P, Mg) following glucose loading. Subjects were eight healthy young male adults, who were divided into two groups with the high (H group) or low (L group) Glu/Gla-OC ratio. The Glu/Gla-OC ratio in the H group was significantly higher than that of the L group (1.32 ± 0.31 vs. 1.02 ± 0.1). The serum Ca/Mg ratio in the H group was significantly higher than that of the L group (4.25 ± 0.18 vs. 4.07 ± 0.06). When the rate of increase in the mean concentration of each urinary mineral after glucose loading in the L group was regarded as 1, the urinary Ca, P, Mg, Ca·P and Ca/Mg in the H group were 1.4, 0.9, 0.9, 1.4 and 0.8, resp. These results indicate that the undercarboxylation of OC, which is represented by the high Glu/Gla-OC ratio, results in the high serum Ca/Mg ratio in the resting level and the high urinary excretion of Ca after glucose loading. It is suggested that the favorable status of vitamin K might be important for keeping **bone** health.

L27 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2002:791853 CAPLUS
DOCUMENT NUMBER: 138:121982
TITLE: Shift of Serum Osteocalcin Components between Cord
Blood and Blood at Day 5 of Life
AUTHOR(S): Shimizu, Nobuhiko; Shima, Masaaki; Hirai, Haruhiko;
Nakajima, Shigeo; Nishimura, Kumi; Yamaoka, Kanji;
Okada, Shintaro
CORPORATE SOURCE: Department of Developmental Medicine, Osaka University
Graduate School of Medicine, Osaka, Japan
SOURCE: Pediatric Research (2002), 52(5), 656-659
CODEN: PEREBL; ISSN: 0031-3998
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Vitamin K deficiency is a relatively common condition in neonates. However, the role of vitamin K in neonatal **bone** metabolism remains to be determined. Osteocalcin (OC) is the most abundant noncollagenous protein in **bone**, and is regulated to be γ -carboxylated by vitamin K. In this study, the authors measured **.gamma.-carboxylated osteocalcin (Gla-OC)**

and non- or undercarboxylated osteocalcin (Glu-OC) sep., and examined the effects of vitamin K on osteocalcin metabolism. Eighteen full-term healthy neonates were enrolled in this study. In the cord and d-5 blood samples, the OC levels were determined by three different methods to examine the intact OC by immunoradiometric assay (IRMA), **Gla-OC**, and Glu-OC. Serum vitamin K fractions, hepaplastin test, and type 1 procollagen carboxyl extension peptide were also determined. Urine samples were also collected from the first voiding and on d 5 to determine urinary pyridinoline, deoxypyridinoline, and γ -carboxylated glutamic acid. Serum levels of phylloquinone (PK) and menaquinone (MK)-4 increased on d 5 following vitamin K administration and increased intake in breast milk and/or formula. The OC levels determined by IRMA did not change between cord and d-5 blood samples, but the **Gla-OC** level increased remarkably and Glu-OC reduced to a negligible level. OC in cord blood is mainly Glu-OC, and Glu-OC is replaced with **Gla-OC** within 5 d of life after vitamin K supplement. The IRMA assay fails to distinguish **Gla-OC** from Glu-OC and caution is needed to estimate **bone** turnover with this method in the perinatal period.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:703891 CAPLUS

DOCUMENT NUMBER: 138:231564

TITLE: Time-dependent effects of vitamin K2 (Menatetrenone) on **bone** metabolism in postmenopausal women

AUTHOR(S): Ozuru, Rieko; Sugimoto, Toshitsugu; Yamaguchi, Tohru; Chihara, Kazuo

CORPORATE SOURCE: Third Division, Department of Medicine, Kobe University School of Medicine, Kobe, 650-0017, Japan

SOURCE: Endocrine Journal (Kyoto, Japan) (2002), 49(3), 363-370

CODEN: ENJOEO; ISSN: 0918-8959

PUBLISHER: Japan Endocrine Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Vitamin K is known to mediate carboxylation of glutamyl residues of osteocalcin. The authors evaluated the effects of vitamin K2 (Menatetrenone) treatment (45 mg/day) for 48 wk on the markers of **bone** formation and resorption, **bone** mineral d. (BMD), and the incidence of vertebral **fractures** in 34 Japanese postmenopausal women (aged 48-82 yr). Serum levels of alkaline phosphatase (ALP) increased gradually and became significant at 48 wk after Menatetrenone treatment, while urinary excretion of deoxypyridinoline (DPD) decreased transiently but significantly at 4 wk. Serum levels of both intact osteocalcin (OC) and carboxylated OC (**Gla-OC**) increased rapidly and significantly within 4 wk and sustained their high values up to 48 wk after the treatment, while those of undercarboxylated OC (Glu-OC) decreased reciprocally. These results can be interpreted to suggest that Glu-OC was converted to **Gla-OC** in vivo. On the other hand, lumbar BMD values showed no significant change and only one subject with a previous vertebral **fracture** had one newly occurring vertebral **fracture**. These results indicate that Menatetrenone treatment of postmenopausal women constantly elevates **bone** formation markers as well as converts Glu-OC to **Gla-OC**. Thus, vitamin K2 treatment may promote **bone** formation, at least as measured biochem. in these subjects.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:907135 CAPLUS

DOCUMENT NUMBER: 136:69001

TITLE: Prolonged intake of isoflavone- and saponin-containing

soybean extract (Nijiru) supplement enhances circulating **.gamma.-carboxylated osteocalcin** concentrations in healthy individuals

AUTHOR(S): Yamaguchi, Masayoshi; Ono, Rie; Ma, Zhong Jie
CORPORATE SOURCE: Lab. Endocrinol. Mol. Metab., Grad. Sch. Nutr. Sci., Univ. Shizuoka, 52-1 Yada, Shizuoka, 422-8526, Japan
SOURCE: Journal of Health Science (2001), 47(6), 579-582
CODEN: JHSCFD; ISSN: 1344-9702
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effect of nijiru, which is a byproduct of the processing of soybeans to make the fermented soybeans called natto, on circulating blood chemical levels related to calcium and **bone** metabolism in healthy individuals was investigated. Twelve volunteers (six men and six women) were received nijiru twice a day for 60 days at a dose of 1500 mg (6 tablets) per day. The serum **.gamma.-carboxylated osteocalcin** concentration was significantly increased by the intake of nijiru in both men and

and women to about 2-fold that in the control group. The serum calcium concentration was significantly decreased by nijiru supplementation in women, and the serum inorg. phosphorus concentration was significantly reduced in both men and women. However, the intake of nijiru did not have a significant effect on serum glucose, nitrogen urea, albumin, free cholesterol, triglyceride, high-d. lipoprotein cholesterol, and γ -glutamyltranspeptidase concns. in men or women, indicating that liver and renal function is not affected by nijiru supplementation. The results of the present study suggest that the intake of isoflavone- and saponin-containing nijiru can stimulate the γ -carboxylation of osteocalcin, which plays an important role in **bone** formation and mineralization, in healthy individuals.

L27 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:707377 CAPLUS
DOCUMENT NUMBER: 133:234752
TITLE: Method for prediction of **bone fractures** by osteocalcin measurements
INVENTOR(S): Kakonen, Sanna-Maria; Luukinen, Heikki; Pettersson, Kim; Lovgren, Timo; Vaananen, H. Kalervo
PATENT ASSIGNEE(S): Finland
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000058732	A1	20001005	WO 2000-FI227	20000320
W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1166122	A1	20020102	EP 2000-914195	20000320
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRIORITY APPLN. INFO.:		FI 1999-693	A	19990329
		WO 2000-FI227	W	20000320

AB This invention concerns a method for the assessment of **bone** fragility and **fracture** risk, or **osteoporosis**, in a person. In said method, the concentration of **gamma-carboxylated osteocalcin** (COC) and optionally also the

concentration of intact or total osteocalcin (IOC or TOC, resp.) in a body fluid

sample of said person is measured. The concentration of **gamma-carboxylated osteocalcin** (COC) so obtained is compared to the mean concentration of **gamma-carboxylated osteocalcin** (mean COC) in similar body fluid samples of the population of the same age and sex. Alternatively, the determined ratio COC/IOC or COC/TOC for said person, is compared to the mean ratio COC/IOC or COC/TOC, (mean ratio COC/IOC or mean ratio COC/TOC) determined from measurements in similar body fluid samples of the population of the same age and sex. A measured COC that is lower than the mean COC is used as indication of **osteoporosis, bone fragility** or increased risk of **bone fracture** in said person. Preferably, a determined ratio COC/TOC that is lower than the mean ratio COC/TOC is used as indication of **osteoporosis, bone fragility** or increased risk of **bone fracture** in said person. The invention concerns further kits for use in the assessment according to this invention.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:879552 CAPLUS

DOCUMENT NUMBER: 134:100018

TITLE: Vitamin K supplementation reduces serum concentrations of under-**gamma.-carboxylated osteocalcin** in healthy young and elderly adults

AUTHOR(S): Binkley, Neil C.; Krueger, Diane C.; Engelke, Jean A.; Foley, Andrea L.; Suttie, John W.

CORPORATE SOURCE: Institute on Aging, Department of Medicine, University of Wisconsin, Madison, USA

SOURCE: American Journal of Clinical Nutrition (2000), 72(6), 1523-1528

CODEN: AJCNAC; ISSN: 0002-9165

PUBLISHER: American Society for Clinical Nutrition

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The objective was to delineate the prevalence of sub-maximal γ -carboxylation as assessed by response to phylloquinone supplementation and to evaluate the effect of this intervention on skeletal turnover in healthy North American adults. Healthy subjects (n = 219), approx. equally distributed by sex and age (18-30 yr and ≥ 65 yr), received daily phylloquinone (1000 μg) or placebo for 2 wk. Serum undercarboxylated osteocalcin (ucOC) and total osteocalcin, N-telopeptides of type I collagen (NTx), **bone**-specific alkaline phosphatase (BSAP), and phylloquinone concns. were measured at baseline and after weeks 1 and 2. At baseline, the mean serum phylloquinone concentration was lower in the young than in the old group; there was no effect of sex. Concomitantly, baseline %ucOC was highest in the young and lowest in the old men ($P < 0.0001$) but did not differ significantly by age in women. After supplementation, serum phylloquinone concentration increased ≈ 10 -fold ($P < 0.0001$) at week 1 (from 0.93 ± 0.08 to 8.86 ± 0.70 nmol/L, $x \pm \text{SEM}$); this was sustained through week 2. Among all supplemented groups, mean %ucOC decreased from 7.6% to 3.4% without significant differences by age or sex; 102 of 112 subjects had a $> 1\%$ decrease. Phylloquinone supplementation reduced serum osteocalcin but did not alter NTx or BSAP concentration. Usual dietary practices in this population did not provide adequate vitamin K for maximal osteocalcin carboxylation. Phylloquinone supplementation reduced serum osteocalcin concentration but did not alter other markers of serum **bone** turnover.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 2000:559660 CAPLUS

DOCUMENT NUMBER: 133:149882

TITLE: Prolonged intake of dietary fermented soybeans (natto) with the reinforced vitamin K2 (menaquinone-7) enhances circulating **.gamma.-carboxylated osteocalcin**

concentration in normal individuals

AUTHOR(S): Tsukamoto, Yoshinori; Ichise, Hideyuki; Yamaguchi, Masayoshi

CORPORATE SOURCE: Cent. Res. Inst., Mitsukan Group Corp., 2-6 Nakamura-cho, Hanada, 475-8585, Japan

SOURCE: Journal of Health Science (2000), 46(4), 317-321

CODEN: JHSCFD; ISSN: 1344-9702

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The change in circulating vitamin K2 (menaquinone-7; MK-7) and **.gamma.-carboxylated osteocalcin** (Gla

osteocalcin) concns. in normal individuals with the intake of fermented soybean (natto) was investigated. Forty eight volunteers (forty five males and three females) were divided into three groups of sixteen volunteers each (fifteen males and one female), and each group was given sequentially the fermented soybean (natto; 50 g) containing three different contents of MK-7 once a day for 14 d as follows: either regular natto with 865 µg MK-7/100 g of natto reinforced natto containing 1295 µg MK-7/100 g, or 1730 µg MK-7/100 g. Serum MK-7 was not found in normal individuals who had not had natto intake. Serum MK-7 and **.gamma.-carboxylated osteocalcin** concns. were significantly raised 7, 10, and 14 d after the start of the intake of reinforced natto containing 1295 or 1730 µg MK-7/100 g. However, serum **.gamma.-carboxylated osteocalcin** levels were not significantly elevated by the intake of regular natto, although serum-MK-7 levels were significantly raised. Moreover, serum **.gamma.-carboxylated osteocalcin** concentration was significantly elevated 14 d after the intake of natto containing either 1295 or 1730 µg MK-7/100 g, as compared with that of regular natto intake. The present study suggests that the intake of dietary MK-7 in the reinforced natto can stimulate γ-carboxylation of osteocalcin, which plays an important role in **bone** formation in normal individuals.

L27 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:376384 CAPLUS

DOCUMENT NUMBER: 133:115494

TITLE: Influence of vitamin D and retinoids on the induction of functional differentiation in vitro of canine osteosarcoma clonal cells

AUTHOR(S): Barroga, E. F.; Kadosawa, T.; Okumura, M.; Fujinaga, T.

CORPORATE SOURCE: Laboratory of Veterinary Surgery, Hokkaido University, Sapporo, 060-0818, Japan

SOURCE: Veterinary Journal (2000), 159(2), 186-193

CODEN: VTJRFP; ISSN: 1090-0233

PUBLISHER: Bailliere Tindall Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The efficacy of 22-oxacalcitriol (OCT), calcitriol, cholecalciferol, all-trans retinoic acid (ATRA) and 9-cis retinoic acid (9-cis RA) to differentiate in vitro four clonal cells of the canine osteosarcoma cell line POS into cells having properties of a functionally mature osteoblast **bone** cell were investigated. The induction of intracellular alkaline phosphatase (ALP) activity, osteocalcin (**GLA-OC**) and type I collagen (PIP) production after 72 h treatment were used as markers of differentiation. At a concentration of 10⁻⁸M, OCT and calcitriol significantly

induced all markers, and ATRA only the ALP of osteoblast, chondroblast and undifferentiated clonal cells. At the same concentration, 9-cis RA and cholecalciferol induced ALP of chondroblast and osteoblast cells, resp.; ATRA, 9-cis RA and cholecalciferol induced PIP of chondroblast and undifferentiated cells. None of the drugs significantly differentiated fibroblast cells. The ability of these agents to differentiate osteosarcoma cells into cells that exhibit properties of functionally mature osteoblastic **bone** cells may promote normal osteogenesis and reverse the loss of control of their differentiation.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:336691 CAPLUS

DOCUMENT NUMBER: 133:119573

TITLE: Prolonged intake of fermented soybean (natto) diets containing vitamin K2 (menaquinone-7) prevents **bone** loss in ovariectomized rats

AUTHOR(S): Yamaguchi, Masayoshi; Kakuda, Hiroyuki; Gao, Ying Hua; Tsukamoto, Yoshinori

CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, Shizuoka, 422-8526, Japan

SOURCE: Journal of Bone and Mineral Metabolism (2000), 18(2), 71-76

CODEN: JBMME4; ISSN: 0914-8779

PUBLISHER: Springer-Verlag Tokyo

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of the prolonged intake of dietary vitamin K2 (menaquinone-7, MK-7) on **bone** loss in ovariectomized (OVX) rats was investigated. OVX rats were freely given exptl. diets containing the fermented soybean (natto; including 9.4 µg MK-7/100g diet) without or with supplemental MK-7 (containing 14.1 or 18.8 µg of MK-7 as total per 100 g diet) for 150 days. Feeding produced a significant elevation of MK-7 concentration in the serum of OVX rats. In this case, the femoral MK-4 content was significantly increased, but MK-7 was not detected in the femoral tissues, indicating degradation of MK-7. Serum **gamma**-**carboxylated osteocalcin** concentration was significantly decreased by OVX. This decrease was significantly prevented by the feeding of the natto diets with supplemental MK-7 (18.8 µg/100 g diets). OVX caused a significant decrease in femoral dry weight, femoral calcium content, and mineral d. These decreases were significantly prevented by feeding with diets containing natto with MK-7 (total, 18.8 µg/100 g diets). This study demonstrates that the prolonged intake of natto dietary including MK-7 has a preventive effect on **bone** loss induced by OVX. Dietary MK-7 may be useful in the prevention of **osteoporosis**.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:786759 CAPLUS

DOCUMENT NUMBER: 132:18583

TITLE: Induction of functional differentiation and growth inhibition in vitro of canine osteosarcoma by 22-oxacalcitriol, calcitriol, and all-trans retinoic acid

AUTHOR(S): Barroga, E.; Kadosawa, T.; Okumura, M.; Fujinaga, T.

CORPORATE SOURCE: Laboratory Veterinary Surgery, Department Veterinary Clinical Sciences, Graduate School Veterinary Medicine, Hokkaido Univ., Sapporo, 060, Japan

SOURCE: Journal of Veterinary Medicine, Series A (1999), 46(9), 573-579

CODEN: JVMAE6; ISSN: 0931-184X
PUBLISHER: Blackwell Wissenschafts-Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effects of 22-oxacalcitriol (OCT), calcitriol, and all-trans retinoic acid (ATRA) on the induction of functional differentiation and growth inhibition of the canine osteosarcoma cell line POS were investigated in vitro via **bone** differentiation markers and proliferation assays, resp. The intracellular alkaline phosphatase (ALP) activity and the γ -carboxyglutamic acid osteocalcin (**GLA-OC**) and procollagen type I C peptide (PIP) production were used as markers of differentiation. Treatment with 10^{-8} M concns. of all drugs for 72 h inhibited growth and increased ALP activity and **GLA-OC** and PIP production in POS. OCT, calcitriol, and ATRA increased the: ALP activity from 1.58 to 2.50, 2.30 and 2.00 $\mu\text{mol}/\text{min}/\text{mg}$ protein, resp.; **GLA-OC** production from 0.71 (control) to 2.87, 2.87, and 1.36 ng/mL, resp.; and PIP production from 433.91 (control) to 536.54, 497.06, and 481.66 ng/mL, resp. This study demonstrated that treatment with these drugs induced a phenotypic maturation of POS cells into cells that exhibit the properties of functionally mature **bone** cells with parallel growth inhibition. The effects of these drugs on functional differentiation may be useful to complement the progression of a normal osteogenic differentiation process in the sarcoma.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 1991:627613 CAPLUS

DOCUMENT NUMBER: 115:227613

TITLE: A one step sandwich enzyme immunoassay for **gamma.-carboxylated osteocalcin** using monoclonal antibodies

AUTHOR(S): Koyama, Nobuto; Ohara, Kanako; Yokota, Hiroko; Kurome, Tohru; Katayama, Masahiko; Hino, Fumitsugu; Kato, Ikunoshin; Akai, Toshihiro

CORPORATE SOURCE: Biotechnol. Res. Lab., Takara Shuzo Co., Ltd., Otsu, 520-21, Japan

SOURCE: Journal of Immunological Methods (1991), 139(1), 17-23
CODEN: JIMMBG; ISSN: 0022-1759

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A highly sensitive, simple and reliable one-step sandwich enzyme immunoassay (EIA) for the γ -carboxylated form of osteocalcin (Gal-OC) has been developed using a monoclonal antibody. The min. amount of **Gla-OC** detected by this EIA was approx. 0.2 ng/mL when a 10 μL aliquot of the sample was used. The serum **Gla-OC** level in 30 healthy subjects was 3.6 ± 2.19 ng/mL (mean \pm SD). A significant increase was seen in patients with chronic renal failure (20.3 ± 4.60 ng/mL), atherosclerosis (8.3 ± 4.94 ng/mL) and **osteoporosis** (10.1 ± 4.60 ng/mL). The correlation between the values obtained by the sandwich EIA and competitive RIA methods was given by the linear regression equation, $y = 2.869 + 0.759x$, for which the correlation coefficient (r) was 0.815 (n = 58). This newly developed **Gla-OC** specific EIA may be useful for the diagnosis of metabolic **bone** disease and ectopic calcification.

L27 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:211063 CAPLUS

DOCUMENT NUMBER: 112:211063

TITLE: Determination of serum Gla-form osteocalcin by enzyme immunoassay with monoclonal antibodies

AUTHOR(S): Yokota, Hiroko; Koyama, Nobuto; Katayama, Masahiko; Hino, Fumitsugu; Kato, Ikunoshin; Akai, Toshihiro

CORPORATE SOURCE: Biotech. Res. Lab., Takara Shuzo Co. Ltd., Otsu,

520-21, Japan
SOURCE: Igaku no Ayumi (1990), 152(8), 525-6
CODEN: IGAYAY; ISSN: 0039-2359
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB Four monoclonal antibodies, OCG4, OCG3, OCG2, and OC4.30 to bovine osteocalcin (OC) were generated. Sandwich enzyme immunoassay using 2 antibodies, OCG4 and OC4.30 was used for the determination of serum Gla-form osteocalcin (**Gla-OC**) in patients with **osteoporosis**, chronic renal failure, and atherosclerosis. The serum **Gla-OC** concentration in these patients was significantly higher compared with normal subjects. The **Gla-OC**-specific assay method may be useful for the diagnosis of metabolic **bone** disease and ectopic calcification.

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L51 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN

AB The authors examined serum total osteocalcin (TOC), carboxylated osteocalcin (COC), and their ratio (COC/TOC) by one-step two-site immunofluorescent assays in 87% (n = 792) of all home-dwelling persons of 70 yr or older living in a defined area in northern Finland. Other baseline subject-related risk factors of fractures were assessed by postal questionnaires, interviews, clin. exams., and tests. During a 5-yr follow-up period, all falls and fractures (n = 106) were recorded by regular phone calls and by examining all the medical records yearly. Serum TOC and COC concns. increased with advancing age and were higher in women